FIG. 1

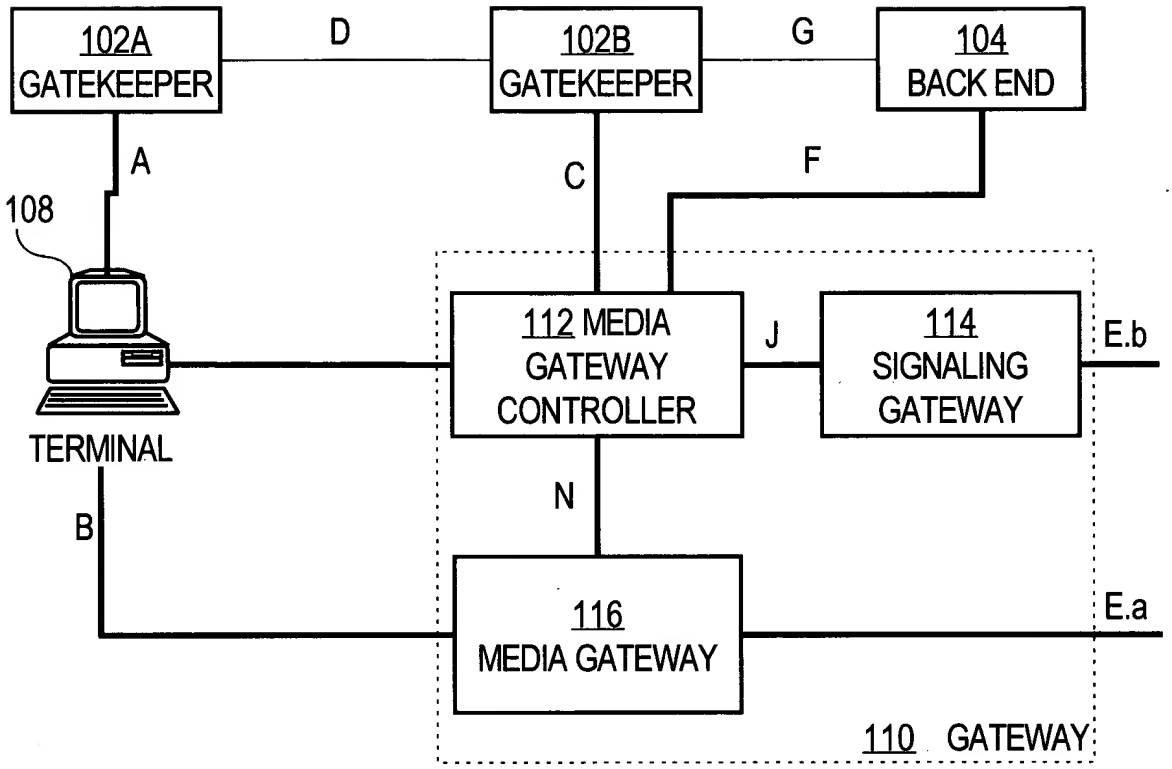

102A
GATEKEEPER
D
102B
GATEKEEPER
G
104
BACK END
A
C
F
108
112 MEDIA
GATEWAY
CONTROLLER
J
114
SIGNALING
GATEWAY
E.b
TERMINAL
N
B
116
MEDIA GATEWAY
E.a
110 GATEWAY

FIG. 2A

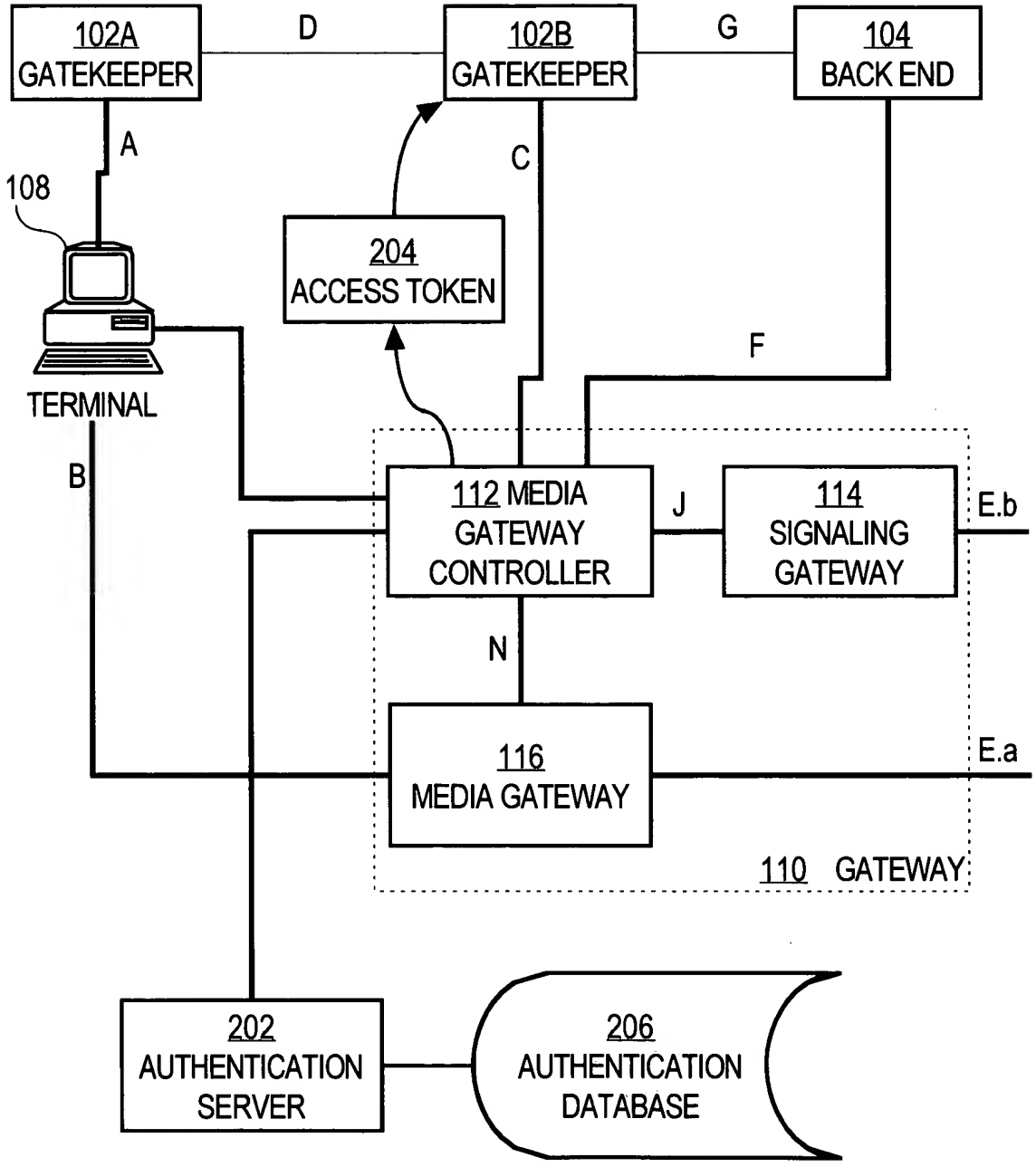

102A
GATEKEEPER
D
102B
GATEKEEPER
G
104
BACK END
A
C
108
204
ACCESS TOKEN
F
TERMINAL
B
112 MEDIA
GATEWAY
CONTROLLER
J
114
SIGNALING
GATEWAY
E.b
N
116
MEDIA GATEWAY
E.a
110 GATEWAY
202
AUTHENTICATION
SERVER
206
AUTHENTICATION
DATABASE

FIG. 2B

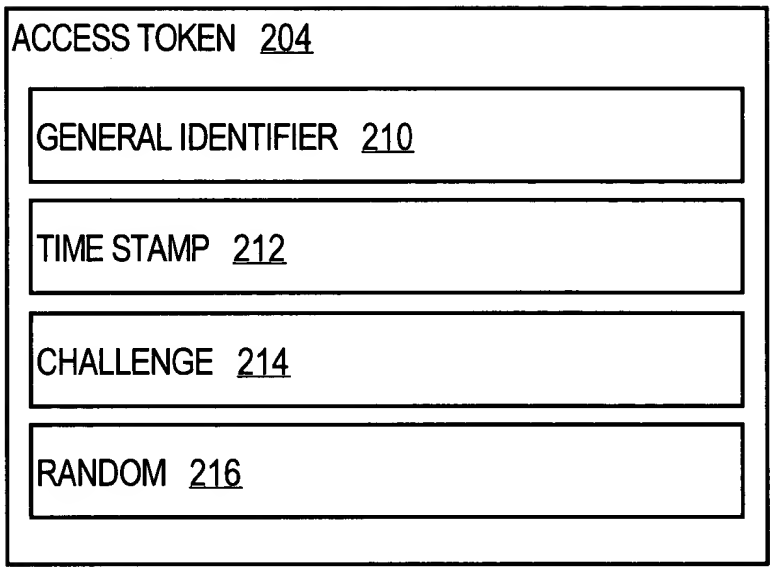

ACCESS TOKEN 204
GENERAL IDENTIFIER 210
TIME STAMP 212
CHALLENGE 214
RANDOM 216

FIG. 3A

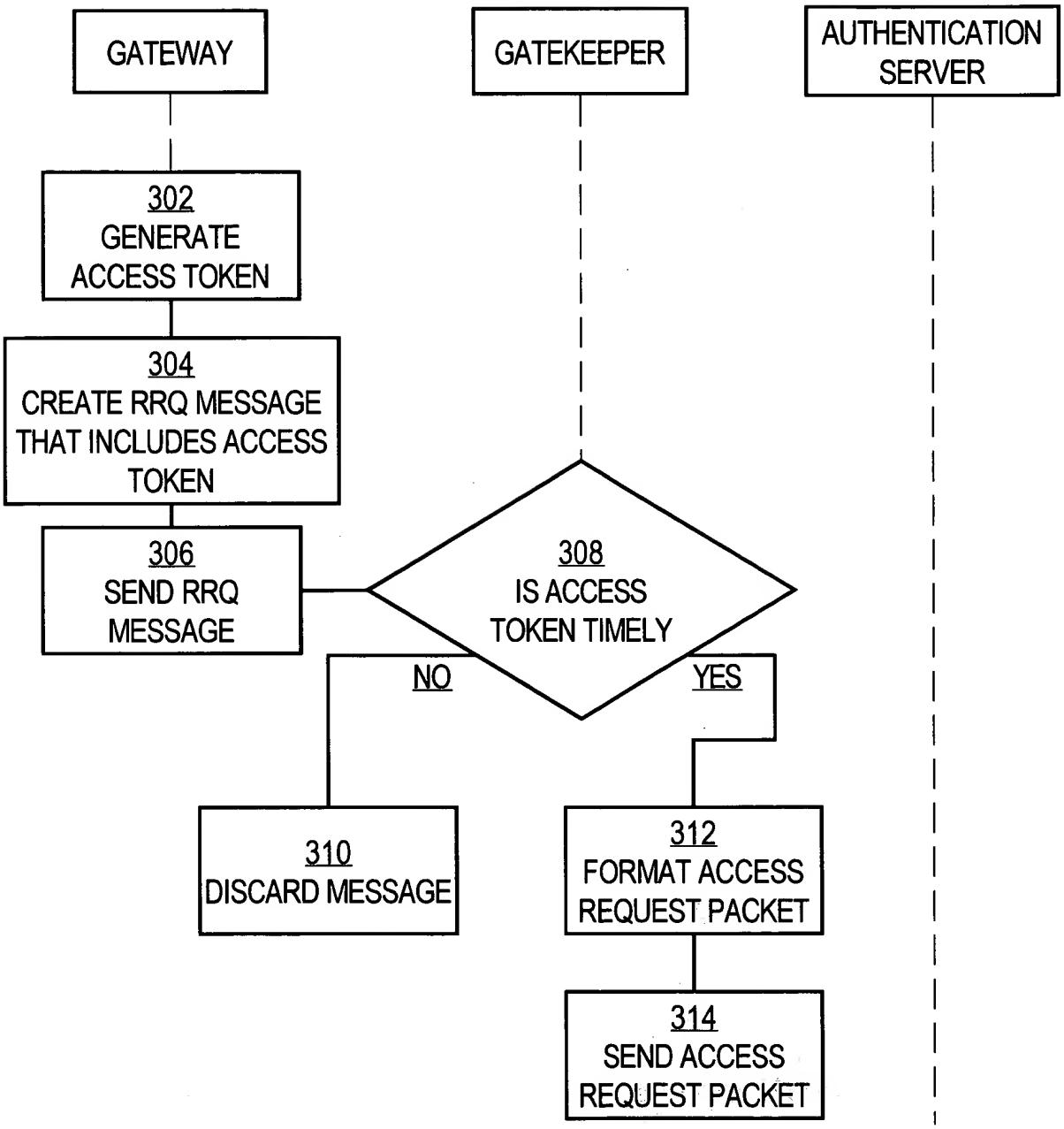

GATEWAY
GATEKEEPER
AUTHENTICATION SERVER
302 GENERATE ACCESS TOKEN
304 CREATE RRQ MESSAGE THAT INCLUDES ACCESS TOKEN
306 SEND RRQ MESSAGE
308 IS ACCESS TOKEN TIMELY
NO
YES
310 DISCARD MESSAGE
312 FORMAT ACCESS REQUEST PACKET
314 SEND ACCESS REQUEST PACKET

FIG. 3B

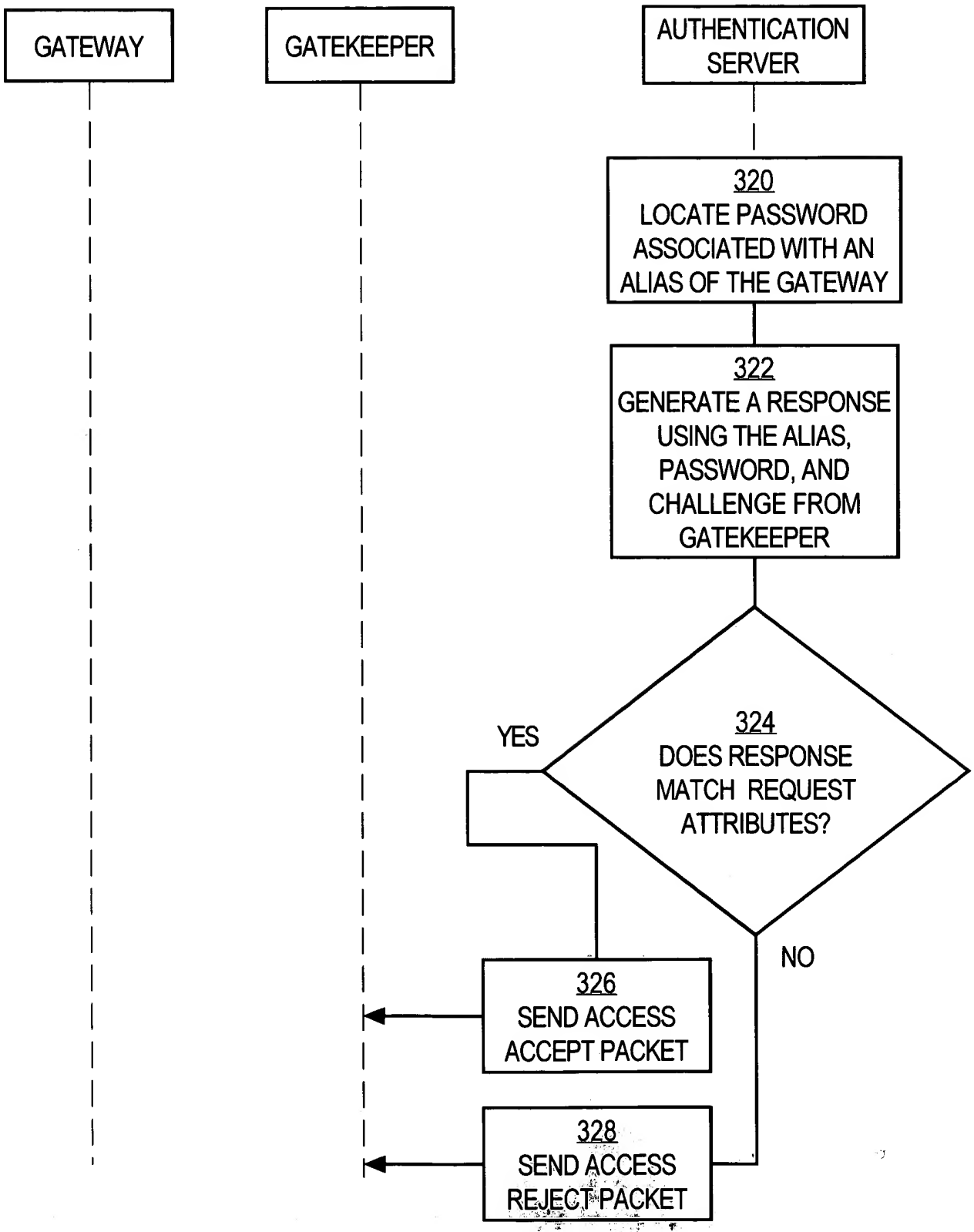

GATEWAY
GATEKEEPER
AUTHENTICATION SERVER
320
LOCATE PASSWORD ASSOCIATED WITH AN ALIAS OF THE GATEWAY
322
GENERATE A RESPONSE USING THE ALIAS, PASSWORD, AND CHALLENGE FROM GATEKEEPER
324
DOES RESPONSE MATCH REQUEST ATTRIBUTES?
YES
NO
326
SEND ACCESS ACCEPT PACKET
328
SEND ACCESS REJECT PACKET

FIG. 3C

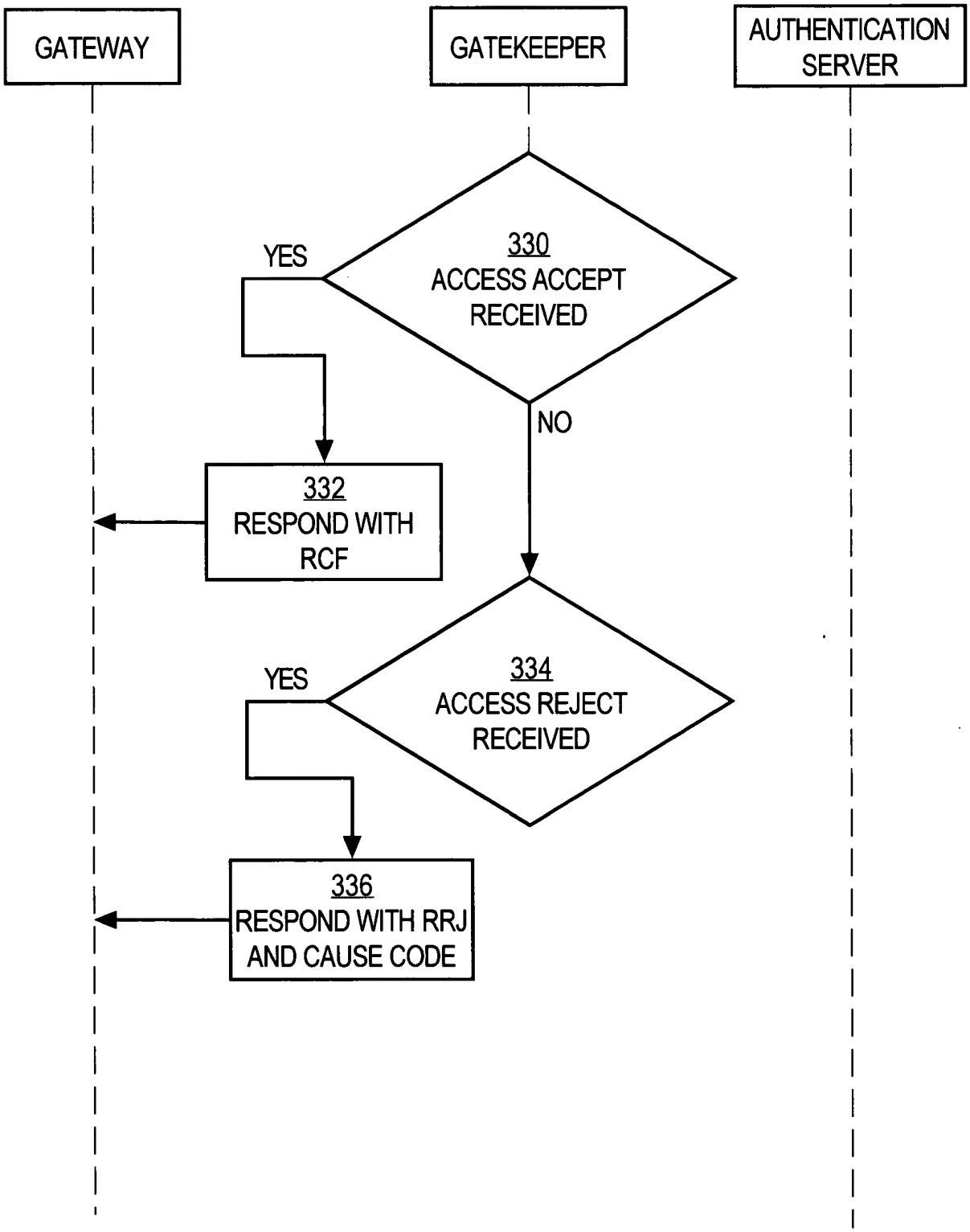

GATEWAY
GATEKEEPER
AUTHENTICATION SERVER
330
ACCESS ACCEPT RECEIVED
YES
NO
332
RESPOND WITH RCF
334
ACCESS REJECT RECEIVED
YES
336
RESPOND WITH RRJ AND CAUSE CODE

FIG. 4A

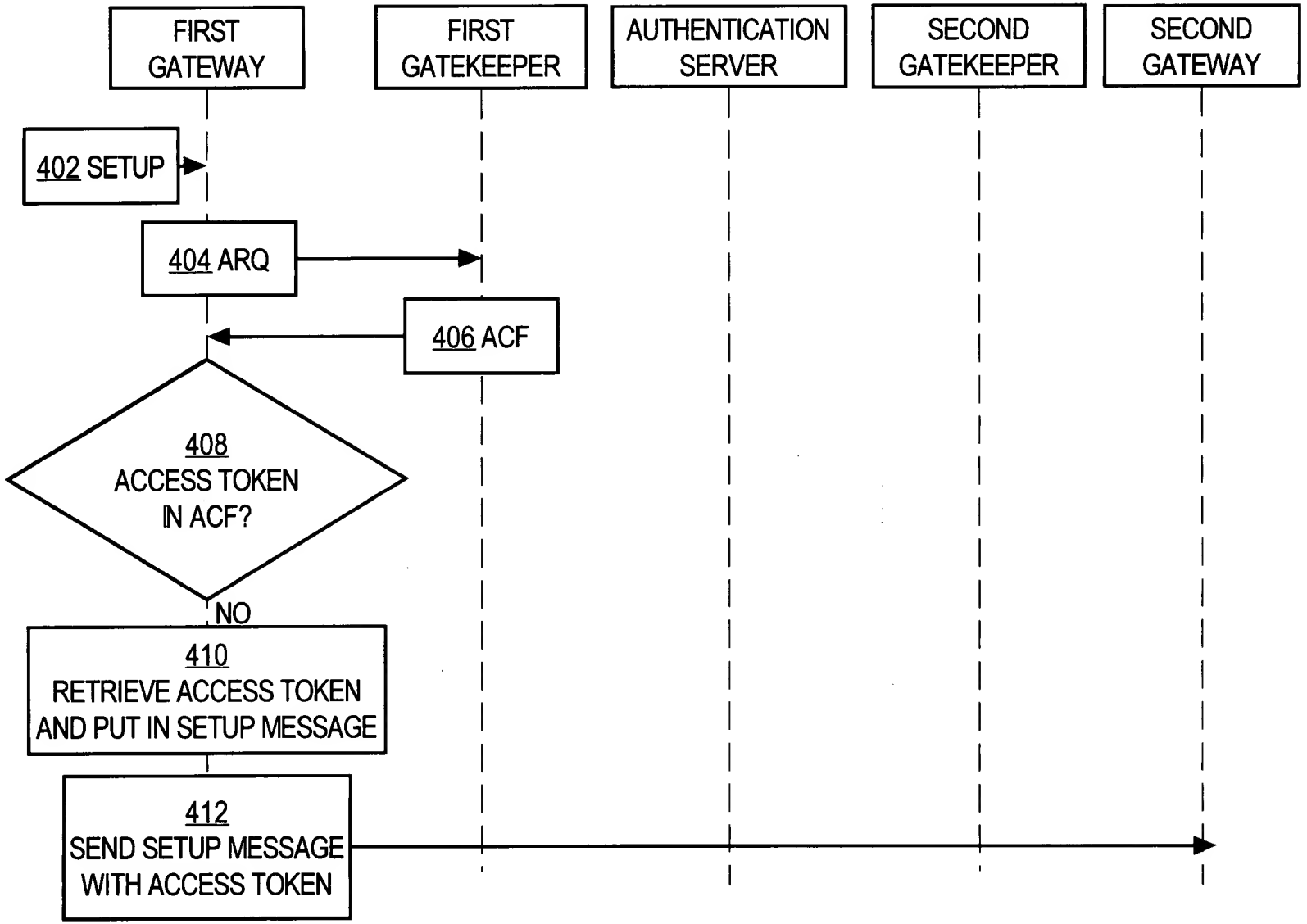

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
402 SETUP
404 ARQ
406 ACF
408 ACCESS TOKEN IN ACF?
NO
410 RETRIEVE ACCESS TOKEN AND PUT IN SETUP MESSAGE
412 SEND SETUP MESSAGE WITH ACCESS TOKEN

FIG. 4B

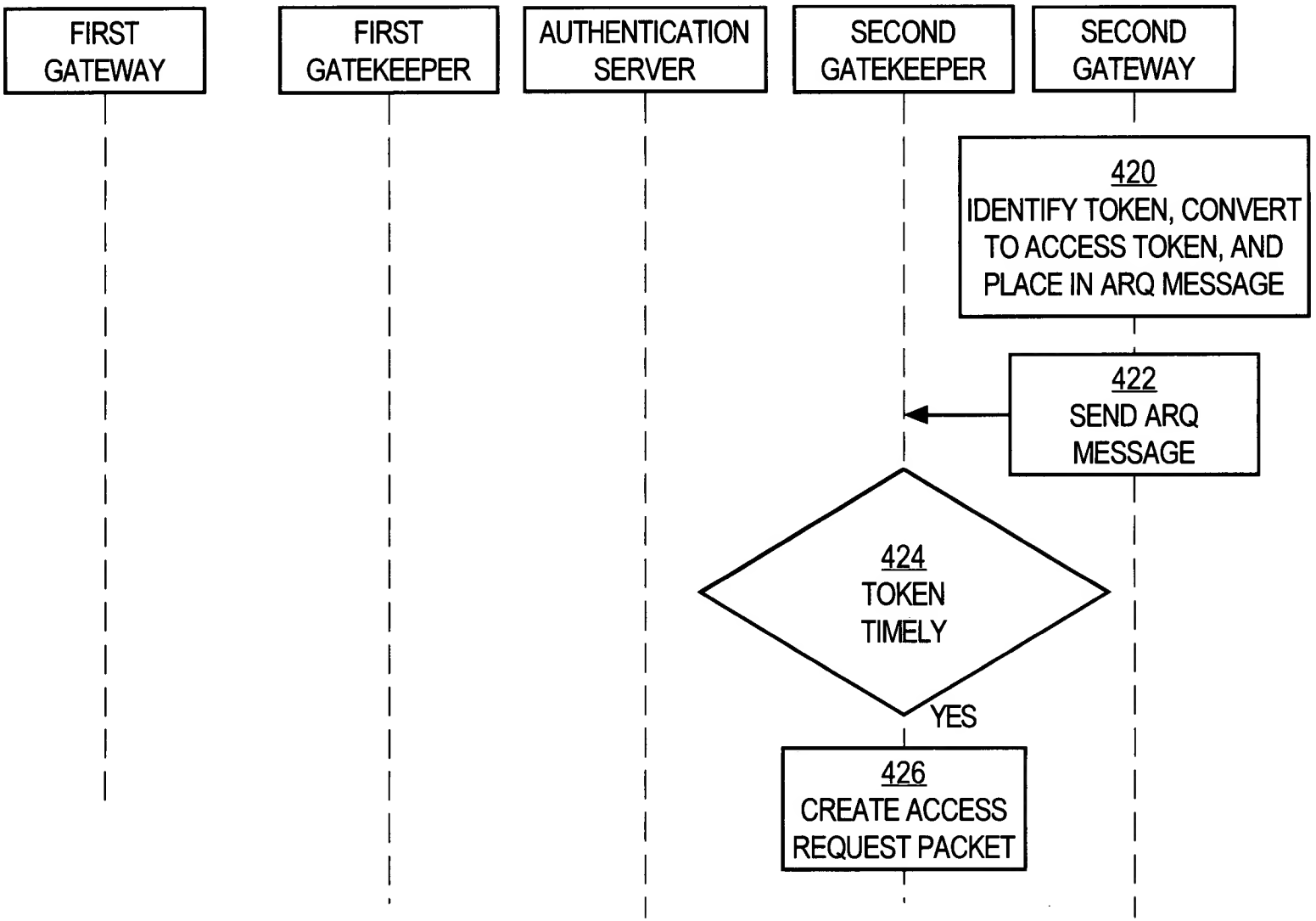

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
420
IDENTIFY TOKEN, CONVERT TO ACCESS TOKEN, AND PLACE IN ARQ MESSAGE
422
SEND ARQ MESSAGE
424
TOKEN TIMELY
YES
426
CREATE ACCESS REQUEST PACKET

FIG. 4C

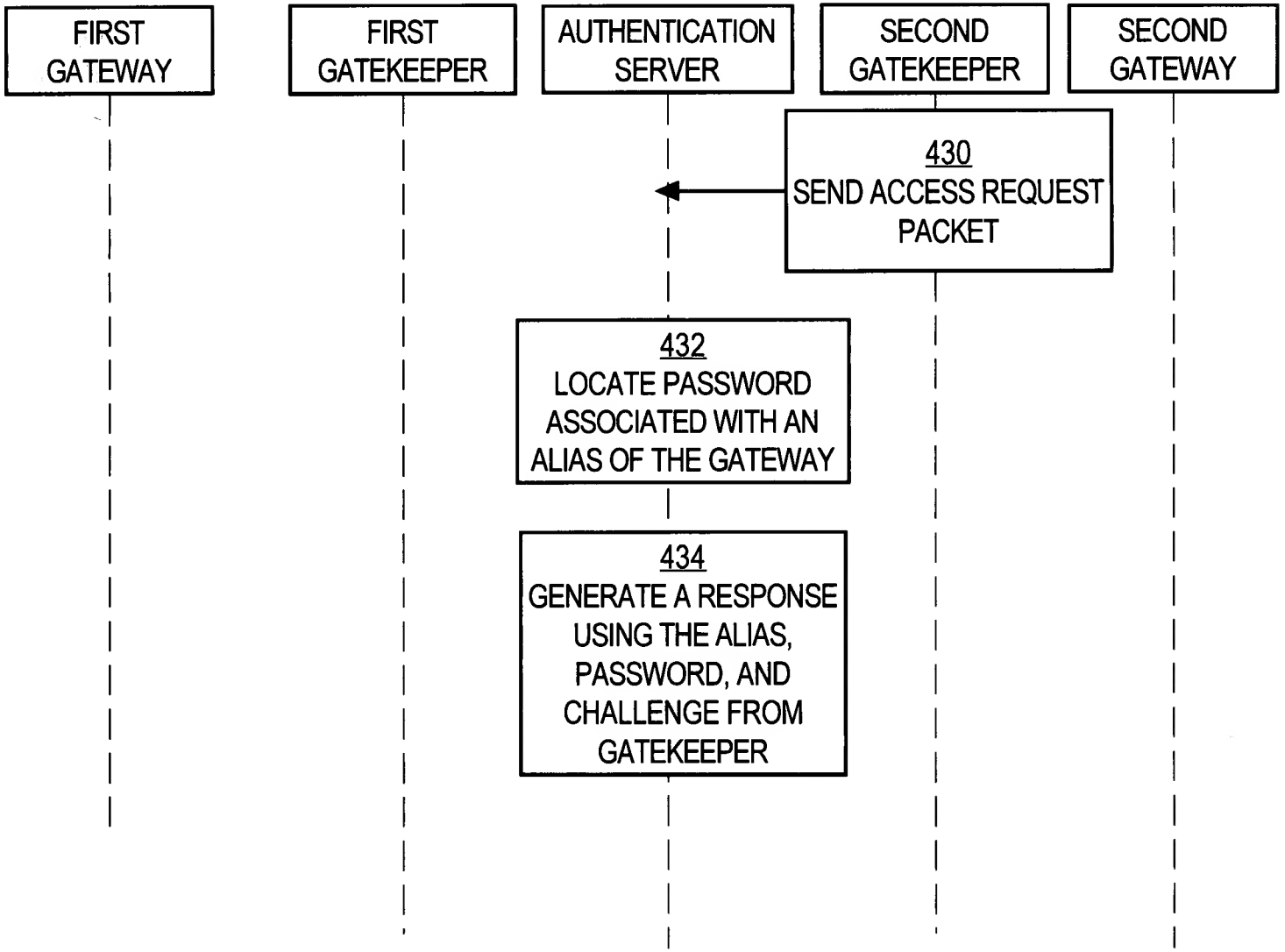

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
430
SEND ACCESS REQUEST PACKET
432
LOCATE PASSWORD ASSOCIATED WITH AN ALIAS OF THE GATEWAY
434
GENERATE A RESPONSE USING THE ALIAS, PASSWORD, AND CHALLENGE FROM GATEKEEPER

FIG. 4D

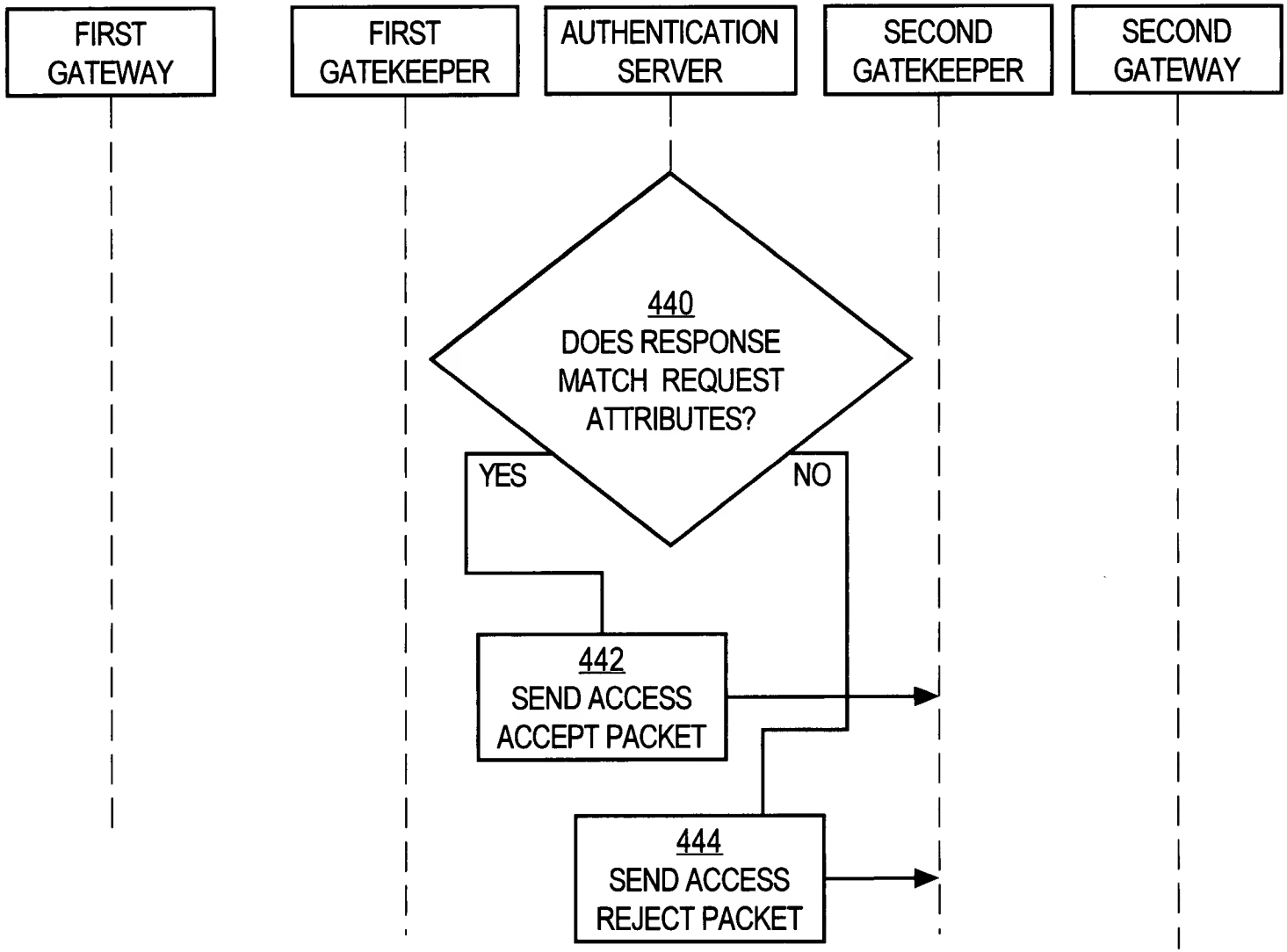

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
440
DOES RESPONSE MATCH REQUEST ATTRIBUTES?
YES
NO
442
SEND ACCESS ACCEPT PACKET
444
SEND ACCESS REJECT PACKET

FIG. 4E

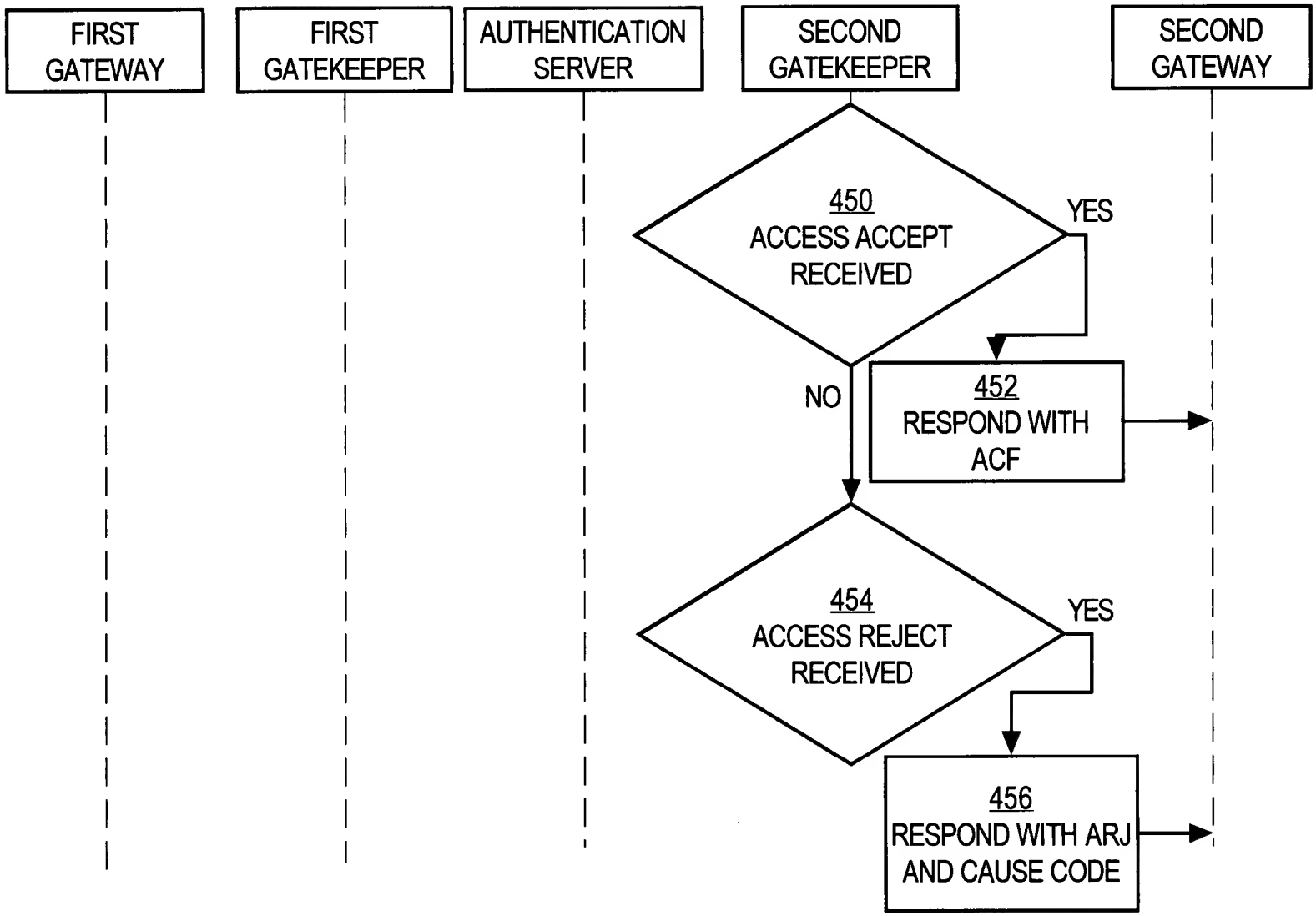

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
450
ACCESS ACCEPT RECEIVED
YES
NO
452
RESPOND WITH ACF
454
ACCESS REJECT RECEIVED
YES
456
RESPOND WITH ARJ AND CAUSE CODE

FIG. 4F

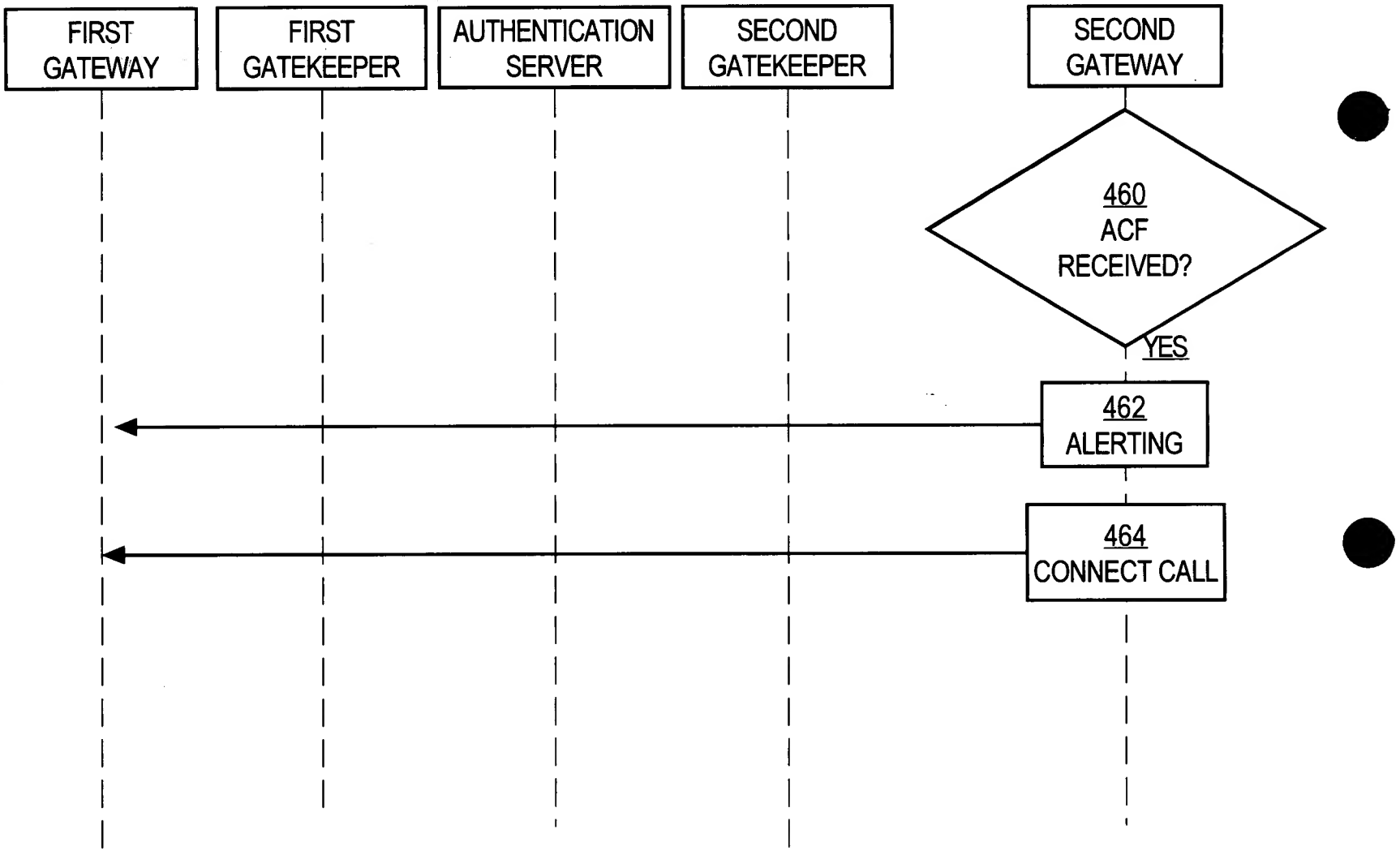

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
460 ACF RECEIVED?
YES
462 ALERTING
464 CONNECT CALL

FIG. 5A

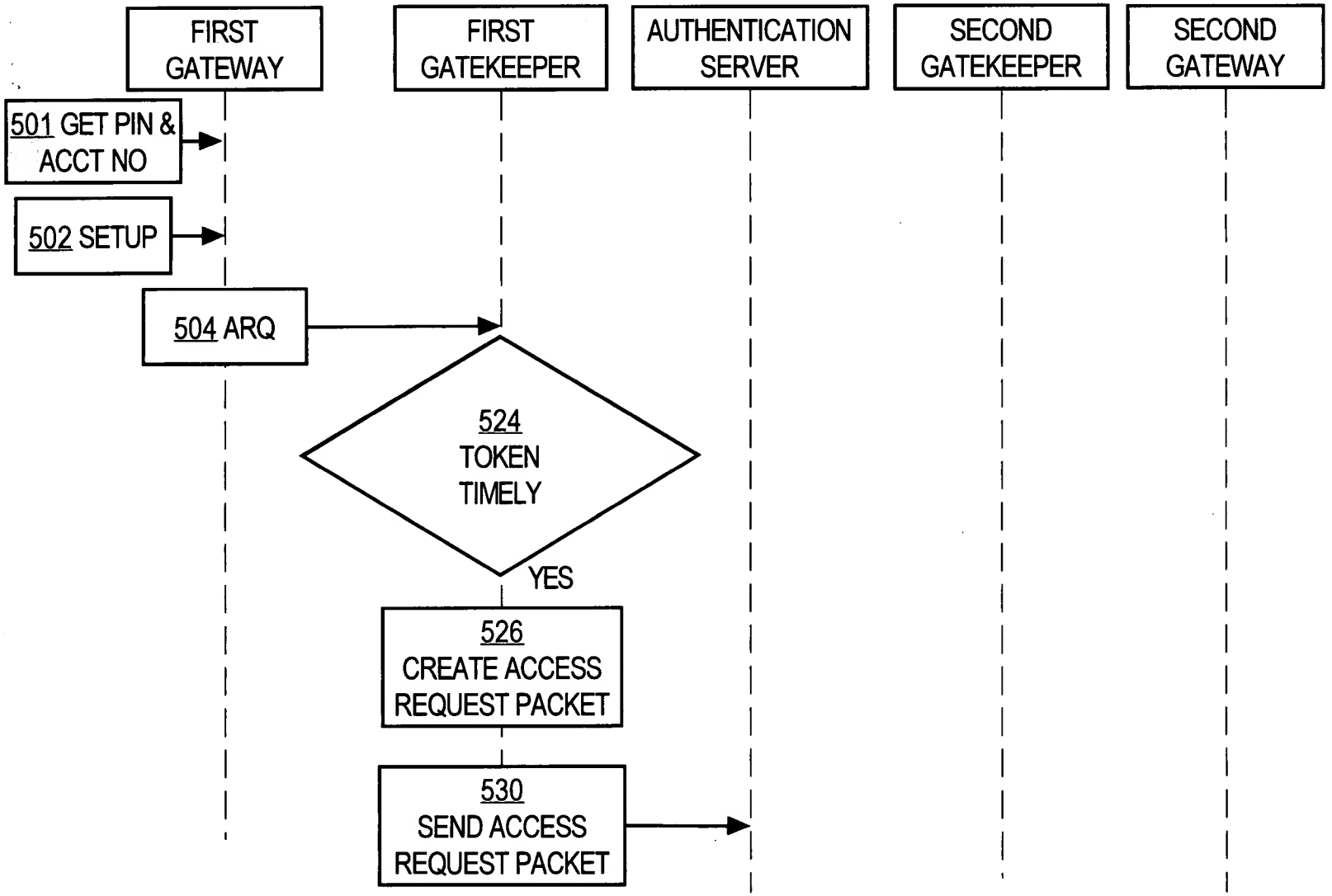

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
501 GET PIN & ACCT NO
502 SETUP
504 ARQ
524 TOKEN TIMELY
YES
526 CREATE ACCESS REQUEST PACKET
530 SEND ACCESS REQUEST PACKET

FIG. 5B

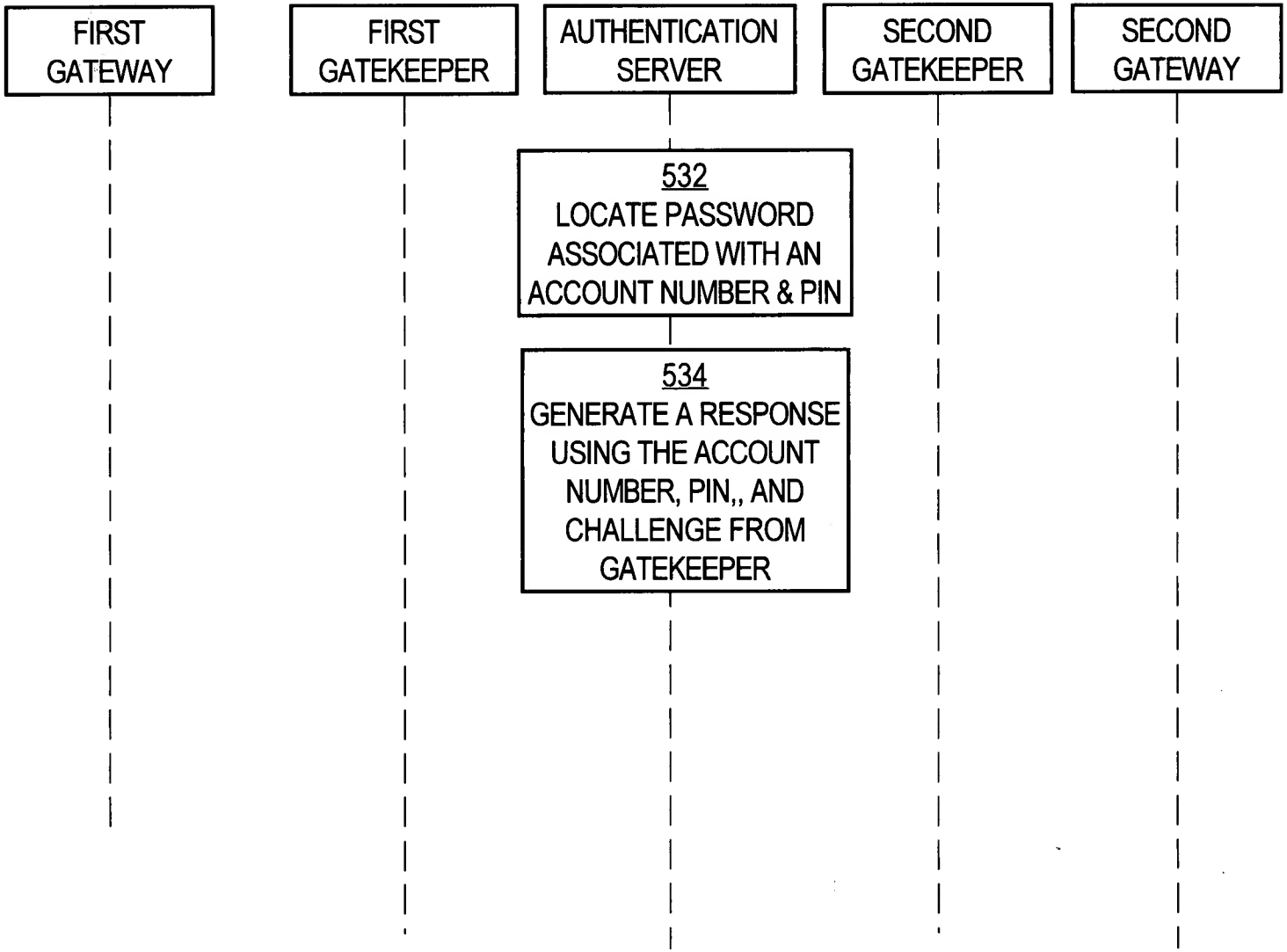

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
532
LOCATE PASSWORD ASSOCIATED WITH AN ACCOUNT NUMBER & PIN
534
GENERATE A RESPONSE USING THE ACCOUNT NUMBER, PIN,, AND CHALLENGE FROM GATEKEEPER

FIG. 5C

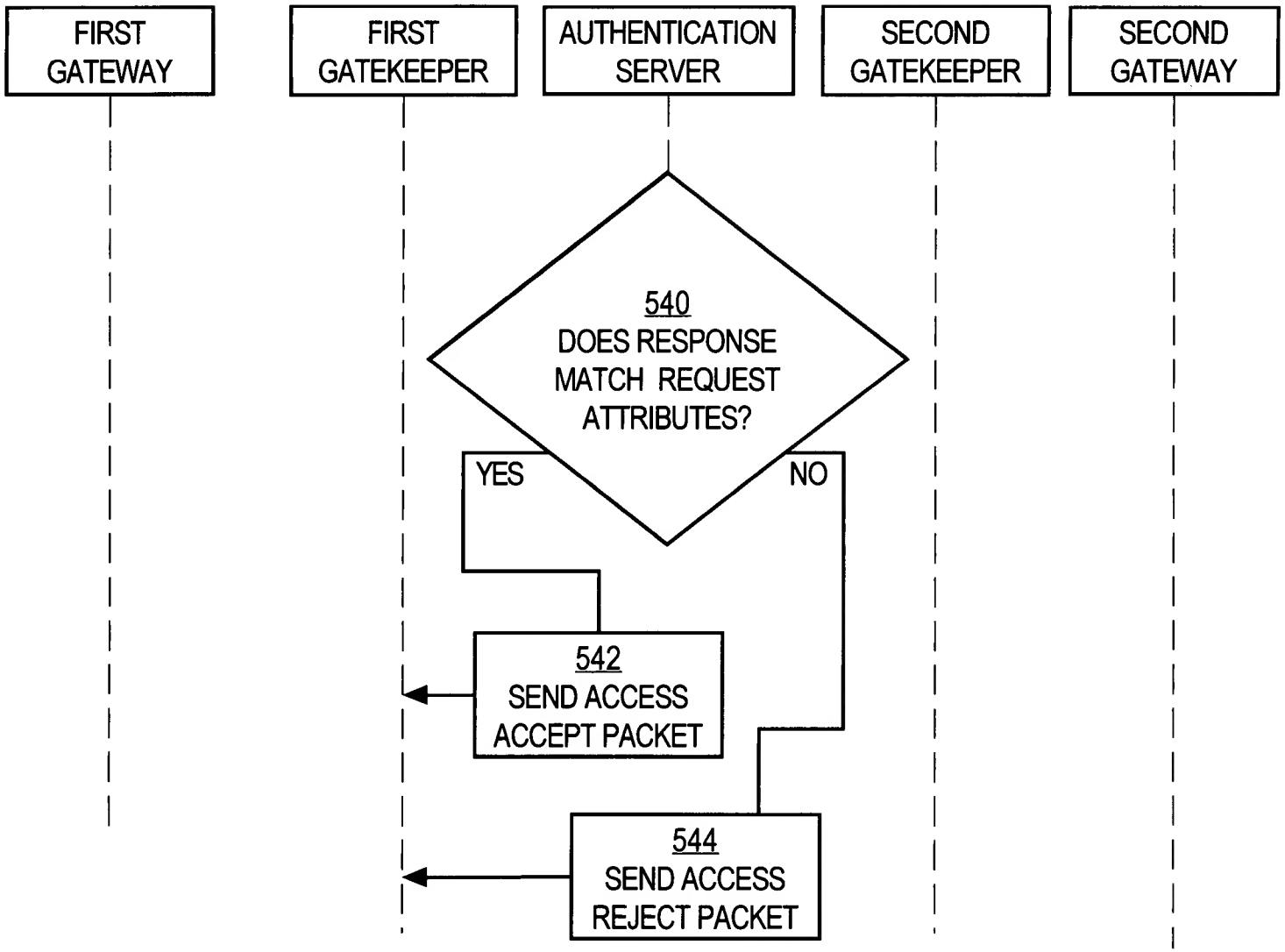

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
540
DOES RESPONSE MATCH REQUEST ATTRIBUTES?
YES
NO
542
SEND ACCESS ACCEPT PACKET
544
SEND ACCESS REJECT PACKET

FIG. 5D

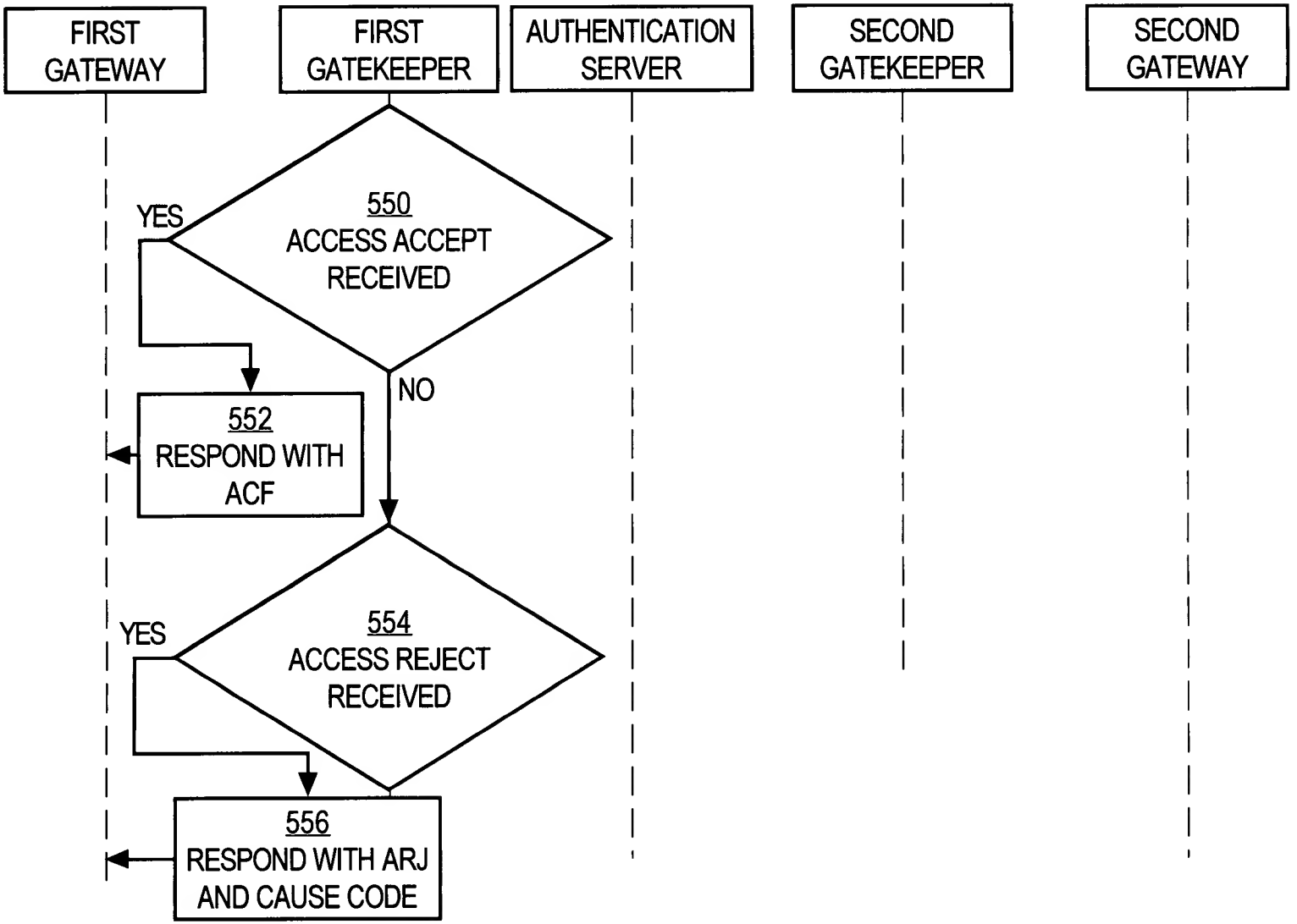

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
550
ACCESS ACCEPT RECEIVED
YES
NO
552
RESPOND WITH ACF
554
ACCESS REJECT RECEIVED
YES
556
RESPOND WITH ARJ AND CAUSE CODE

FIG. 5E

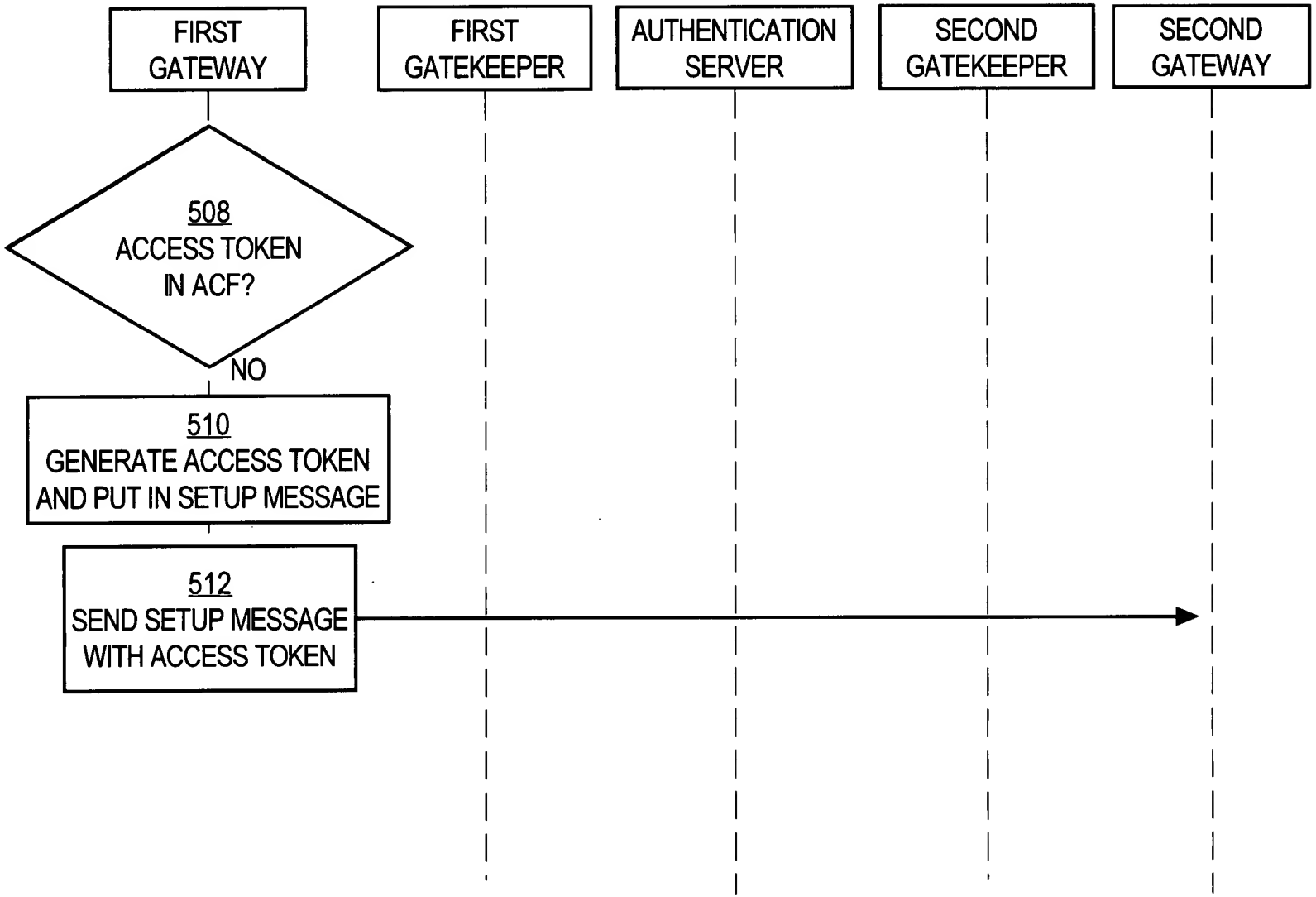

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
508
ACCESS TOKEN IN ACF?
NO
510
GENERATE ACCESS TOKEN AND PUT IN SETUP MESSAGE
512
SEND SETUP MESSAGE WITH ACCESS TOKEN

FIG. 5F

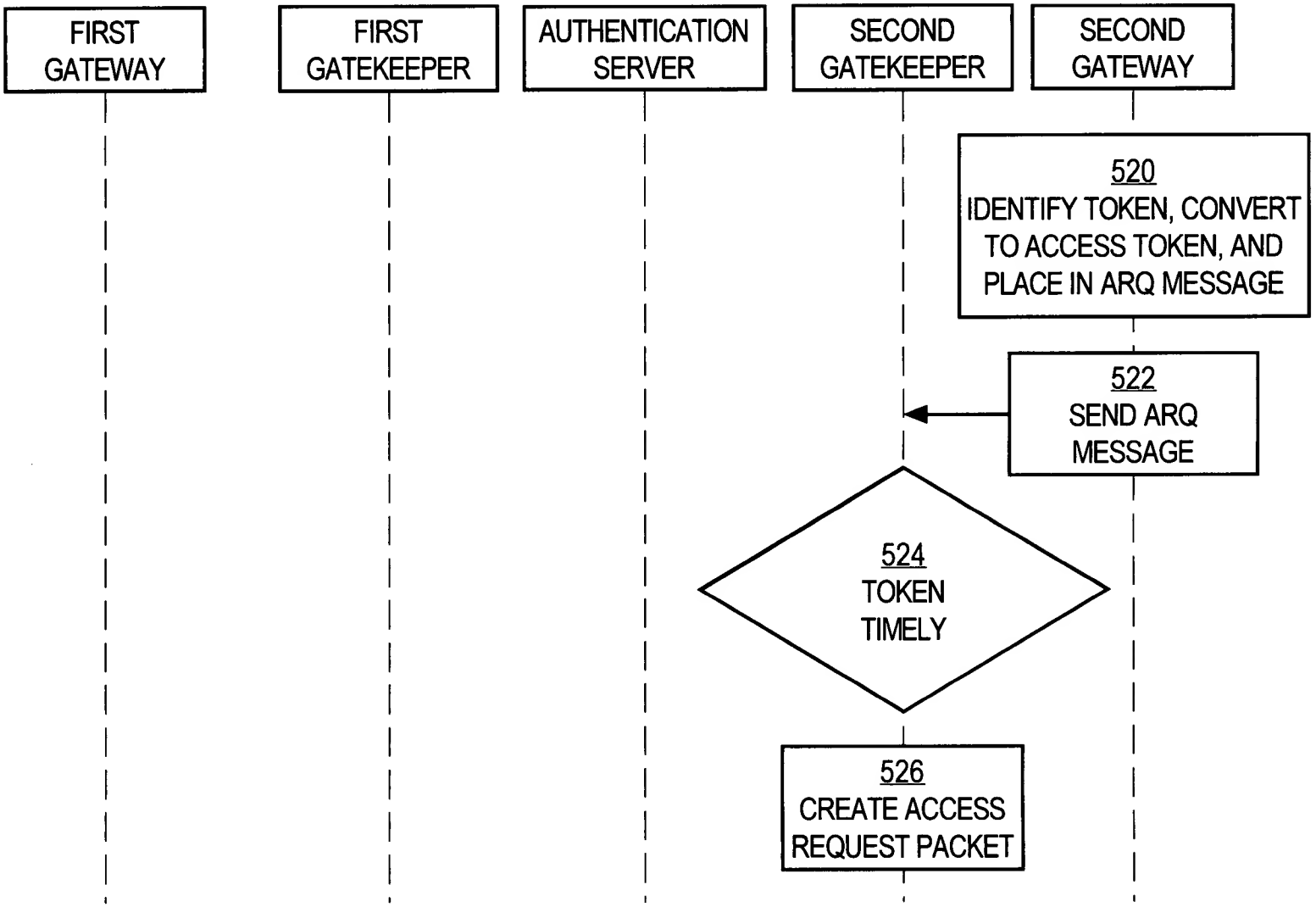

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
520
IDENTIFY TOKEN, CONVERT TO ACCESS TOKEN, AND PLACE IN ARQ MESSAGE
522
SEND ARQ MESSAGE
524
TOKEN TIMELY
526
CREATE ACCESS REQUEST PACKET

FIG. 5G

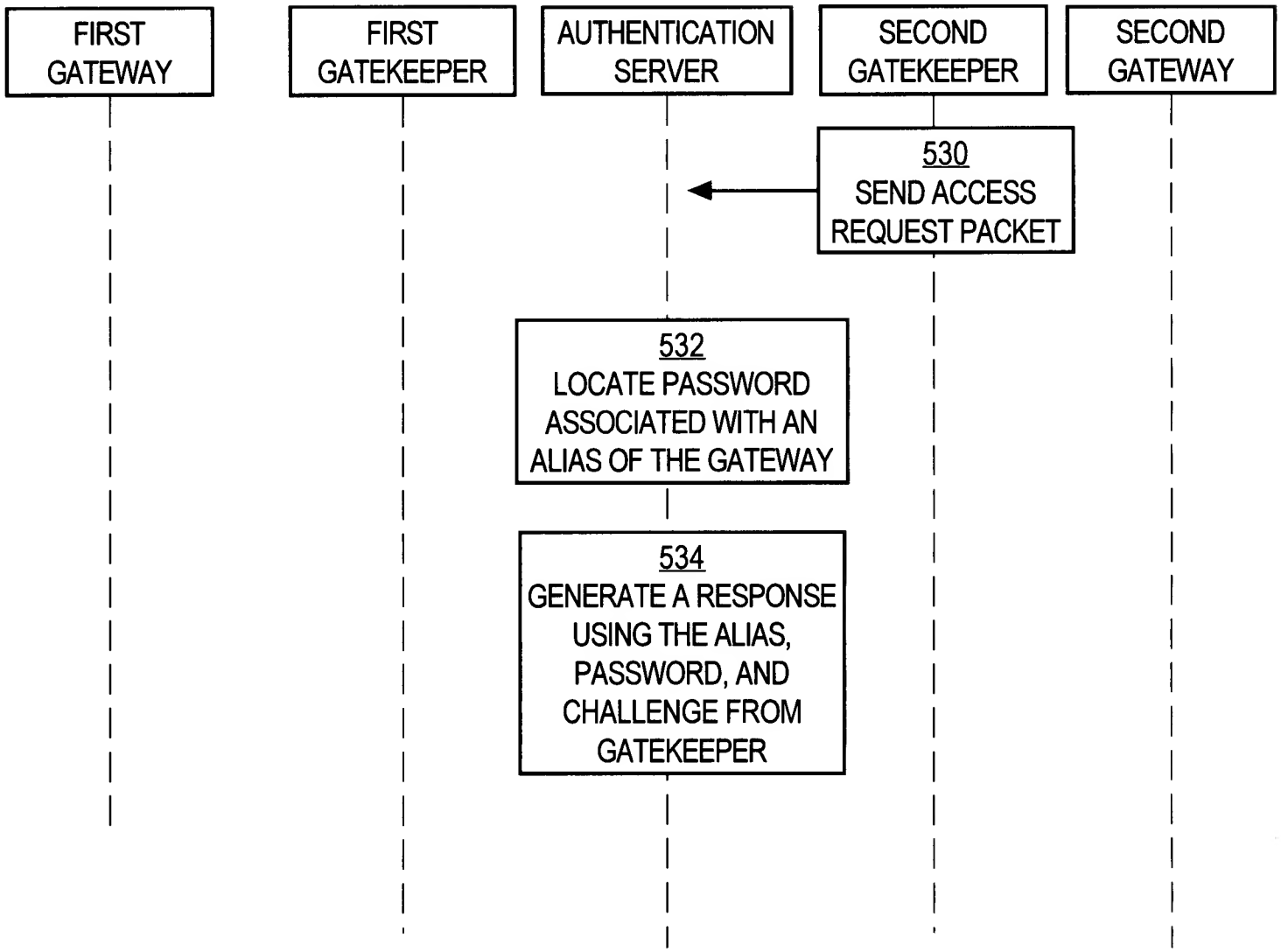

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
530
SEND ACCESS REQUEST PACKET
532
LOCATE PASSWORD ASSOCIATED WITH AN ALIAS OF THE GATEWAY
534
GENERATE A RESPONSE USING THE ALIAS, PASSWORD, AND CHALLENGE FROM GATEKEEPER

FIG. 5H

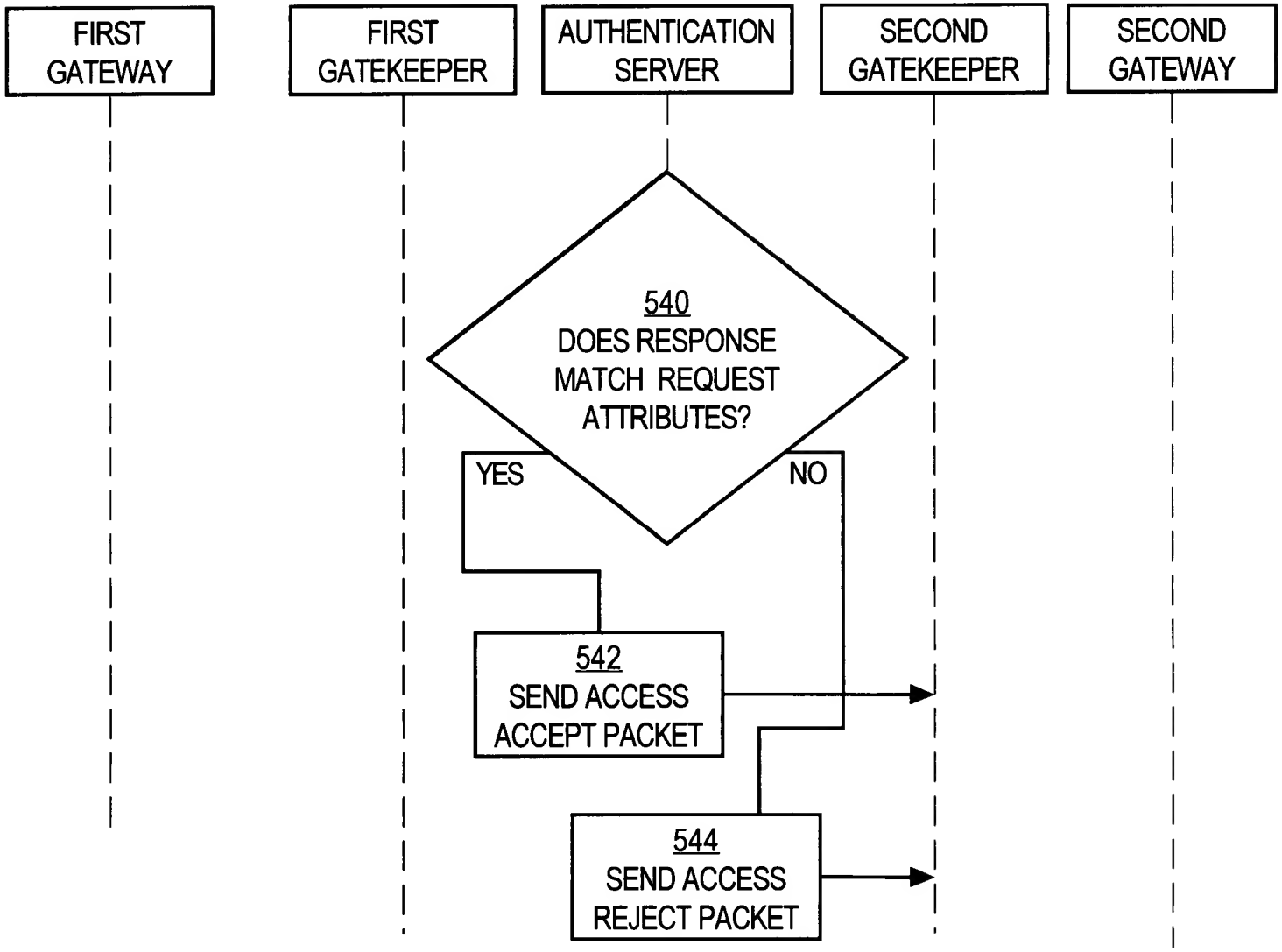

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
540
DOES RESPONSE MATCH REQUEST ATTRIBUTES?
YES
NO
542
SEND ACCESS ACCEPT PACKET
544
SEND ACCESS REJECT PACKET

FIG. 5J

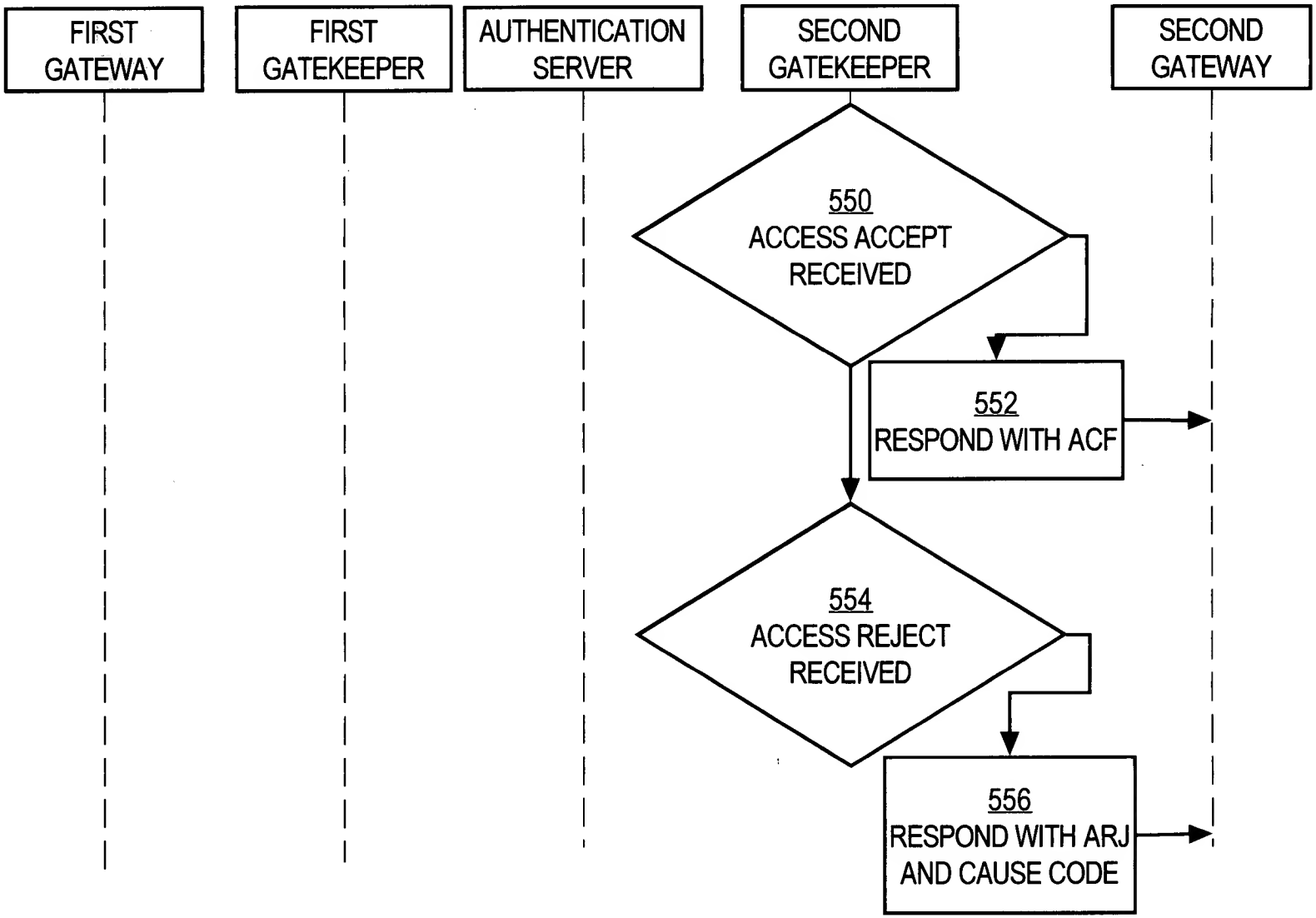
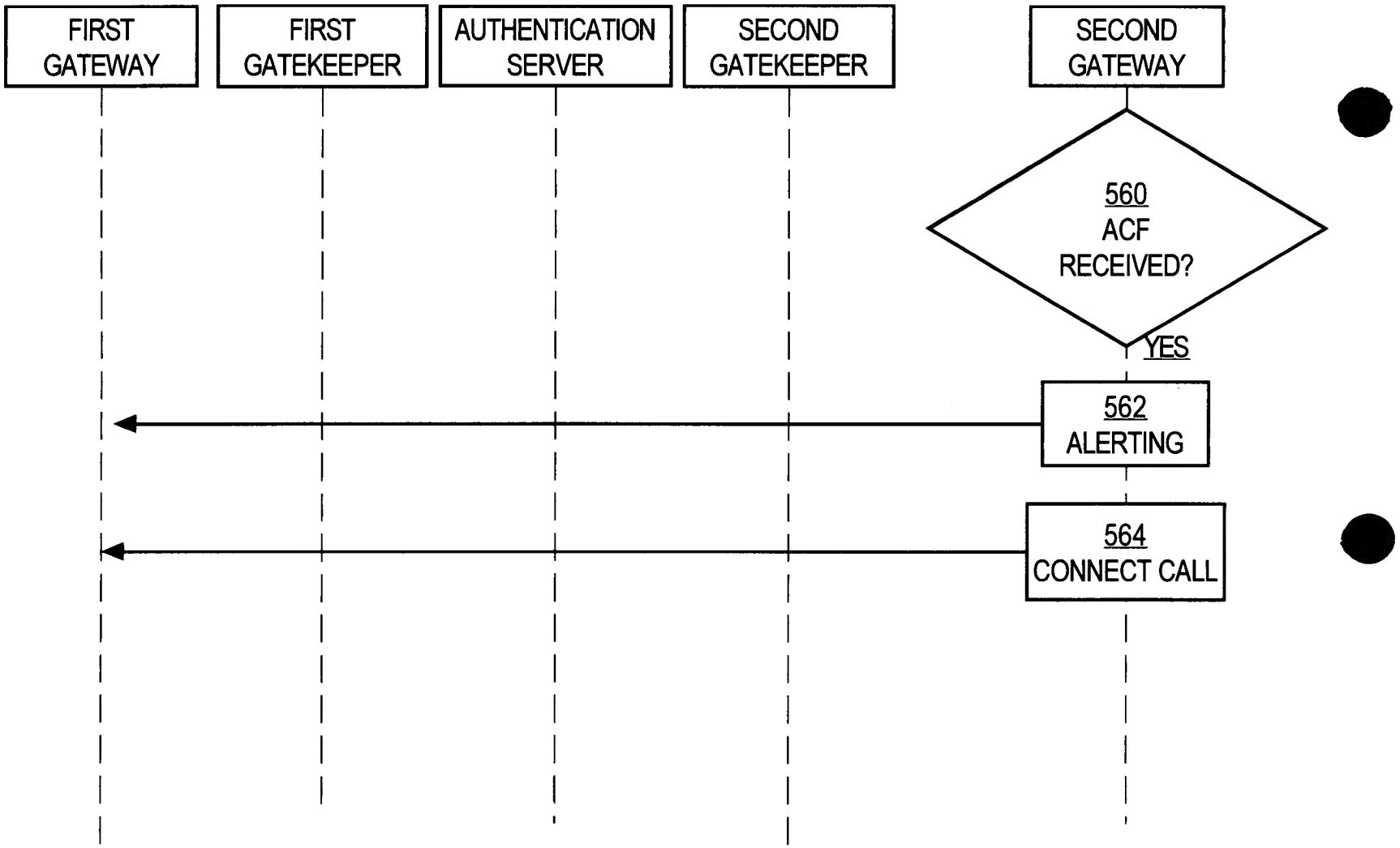

FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
550
ACCESS ACCEPT RECEIVED
552
RESPOND WITH ACF
554
ACCESS REJECT RECEIVED
556
RESPOND WITH ARJ AND CAUSE CODE

FIG. 5K


FIRST GATEWAY
FIRST GATEKEEPER
AUTHENTICATION SERVER
SECOND GATEKEEPER
SECOND GATEWAY
560 ACF RECEIVED?
YES
562 ALERTING
564 CONNECT CALL

DOCKET 9925/960

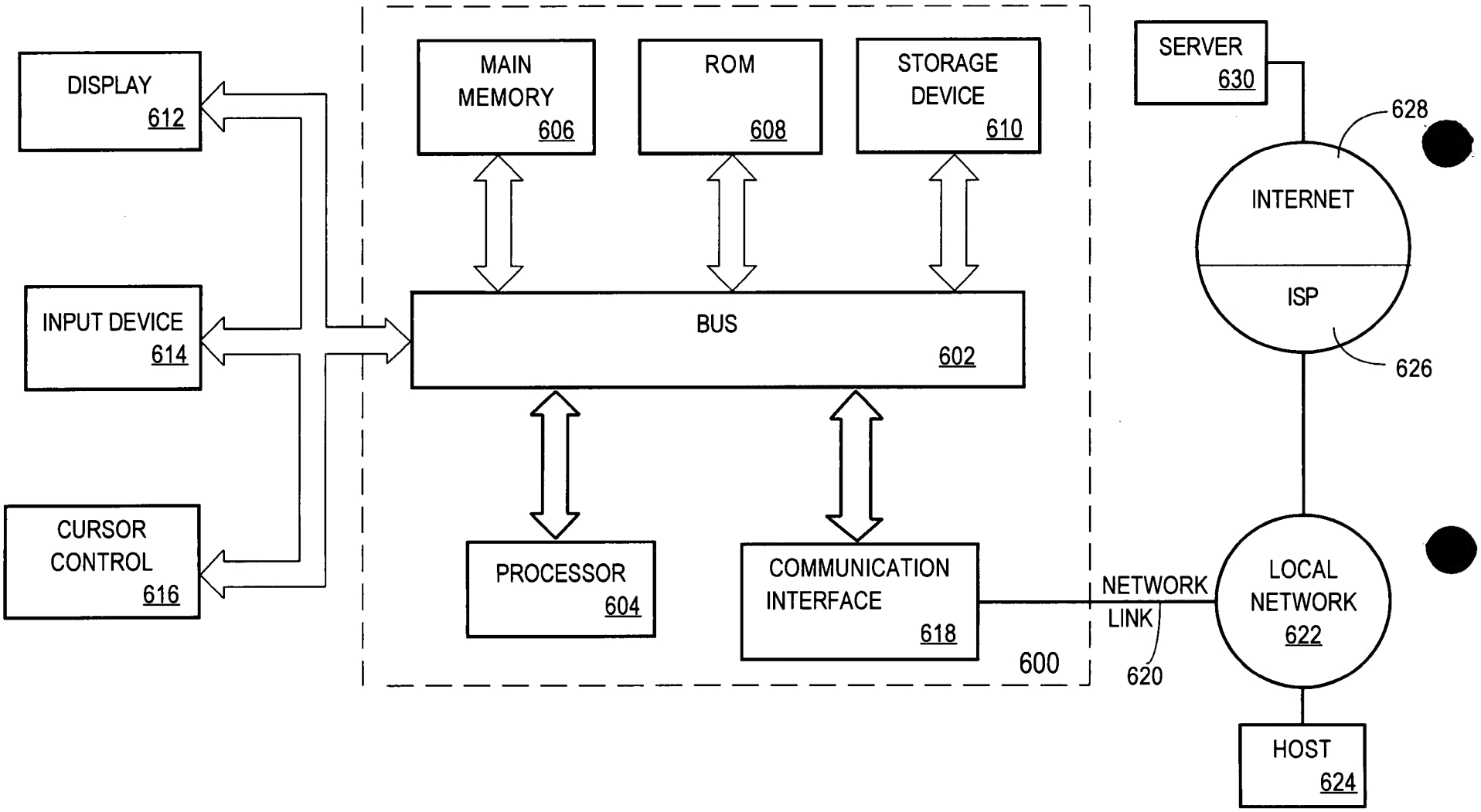



FIG. 6